

Notice of Allowability

Application No.

09/814,417

Examiner

Russell Frejd

Applicant(s)

SUBBARAO ET AL.

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment received 9-August-2004.
2. ☒ The allowed claim(s) is/are 1,5-7 and 9-16.
3. ☒ The drawings filed on 09 August 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Russell Frejd
RUSSELL FREJD
PRIMARY EXAMINER

In re Application of: Subbarao et al.

Allowance of Application # 09/814,417

1. The following communication is in response to applicant's Amendment, received 9-August-2004.

Reasons for Allowance

2. The following is an Examiner's Statement of Reasons for the indication of allowable subject matter. The instant application is directed to a non-obvious improvement over the information described in the related prior art, the improvement comprising a method for calculating a switching threshold delay and a slope delay for a gate input signal of a cell, that includes the steps of: (a) initializing estimates of effective capacitances C_{eff1} and C_{eff2} , of a switching threshold delay t_0 , and of a slope delay Δt ; (b) solving ramp response equations for t_0 and Δt as a function of C_{eff1} and C_{eff2} ; (c) comparing the estimates of t_0 and Δt with solutions for t_0 and Δt found in step (b); and (d) replacing the estimates of t_0 and Δt with the solutions for t_0 and Δt if the solutions for t_0 and Δt have not converged to the estimates of t_0 and Δt .

2.1 The Specification clearly indicates [p. 7, lines 1-6] that the Thevenin model, of the present invention, is described by equations derived from the article authored by Dartu et al., entitled "Performance Computation for Precharacterized CMOS Gates with RC Loads".

However, in contrast to the methods that solve for the Thevenin parameters using a single effective capacitance, the present invention uses two values of effective capacitance, C_{eff1} and C_{eff2} , wherein C_{eff1} is used to find $t_{30}(C_{eff1})$ (for a rising transition) or $t_{70}(C_{eff1})$ (for a falling

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transition), and C_{eff2} is used to find $t_{50}(C_{eff2})$ to calculate the Thevenin parameters from the ramp response equations [p. 7, lines 19-26]. This patentable distinction is included in each of the independent claims, nos. 1 and 10. The art of record, either individually or in combination, fails to teach, suggest, or render obvious the useful, concrete and tangible calculation of a switching threshold delay and a slope delay for a gate input signal of a cell, having the corresponding structure which is disclosed in the specification and equivalents thereof at least at page 4, line 25 through page 11, line 26, and Figures 1-6. In view of the foregoing, the claims of the present application are found to be patentable over the prior art.

Response Guidelines

3. Any comments considered necessary by applicant **MUST** be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should clearly be labeled "Comments on Statement of Reasons for Allowance".

4. **Any response to the Examiner in regard to this allowance should be**

directed to: Russell Frejd, telephone number (703) 305-4839, Monday-Friday from 0630 to 1500 ET, or the examiner's supervisor, Jean Homere, telephone number (703) 308-6647. Any inquiry of a general nature should be directed to the Tech Center 2100 receptionist, telephone number (703) 305-3900. The TC 2100 Customer Service telephone number is (703) 306-5631.

mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: (703) 872-9306

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Hand-delivered responses should be brought to 220 South 20th Street, Crystal Plaza Two, Lobby, Room 1B03, Arlington, VA, 22202.

Date: 25-September-2004

Russell Frejd

**RUSSELL FREJD
PRIMARY EXAMINER**